

Energy Issues in San Diego and the California-Baja California Binational Region

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California Energy Commission Workshop

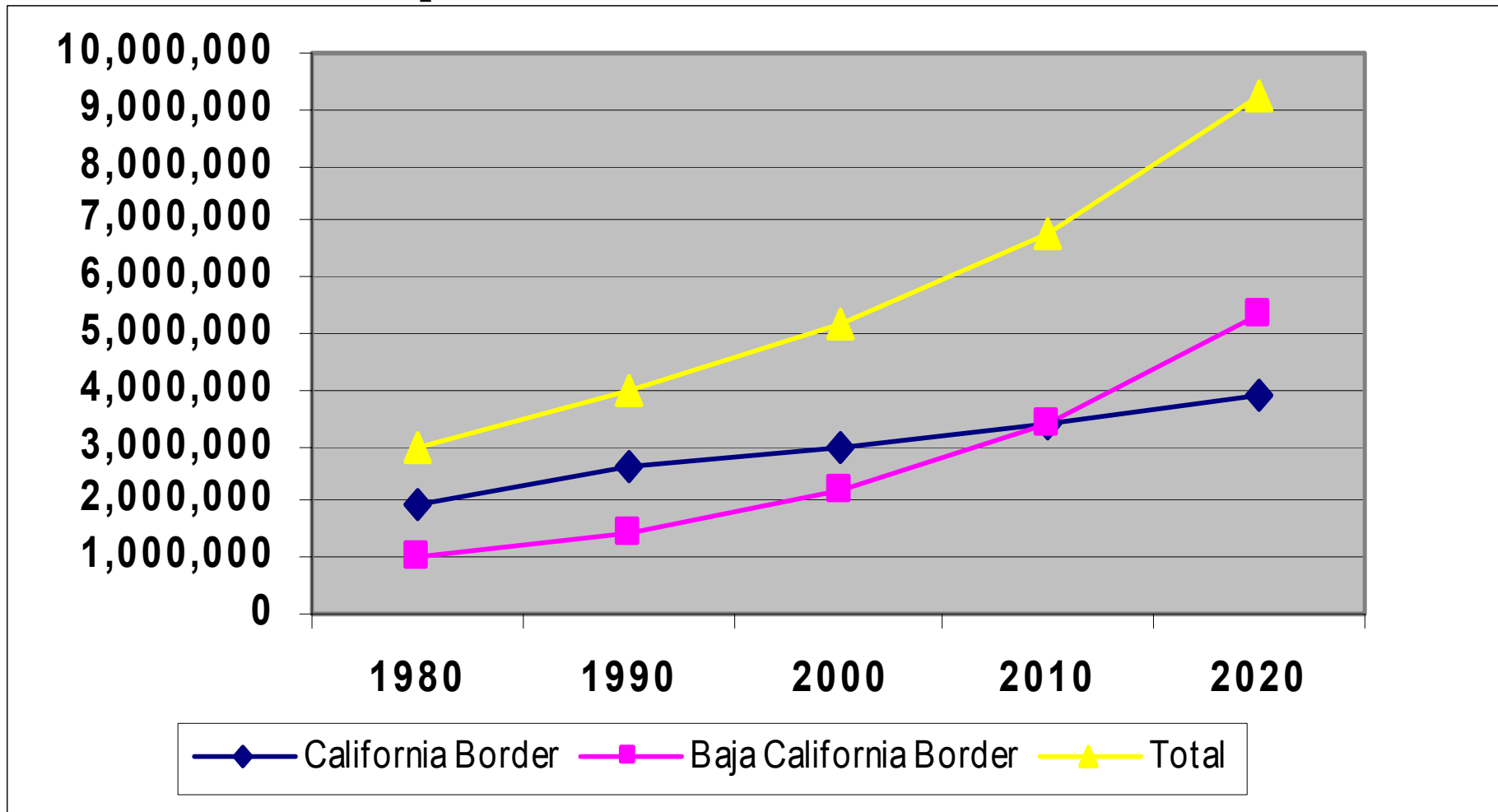
September 30 2004

- **Energy Planning in the California-Baja California Binational Region**
- **Energy Portfolios and Related Air Emissions**
- **Renewable Energy Working Group**

Energy Planning in the California-Baja California Binational Region



California-Baja California Border Population, 1980–2020



Source: *The U.S.-Mexican Border Environment: A Road Map to a Sustainable 2020*. San Diego State University Press.
Paul Ganster, editor, 2000

Main Issues

- ▶ San Diego and Baja California are almost *totally dependent* on energy resources from outside the region.
- ▶ Current population is about 6 million. By 2020, population projected to be 9 million.
- ▶ Demand for power in Baja California is expected to grow by 6-7 % per year and in San Diego by 1.5% per year, at least for next 5-7 years.
- ▶ Demand for natural gas in Baja California is expected to increase 7% annually for the next ten years. In San Diego, much less, only 1.6%.
- Currently, main energy resources are oil, natural gas, geothermal and uranium. Very small amounts of solar and wind.

Average Annual Growth Rates for Baja California

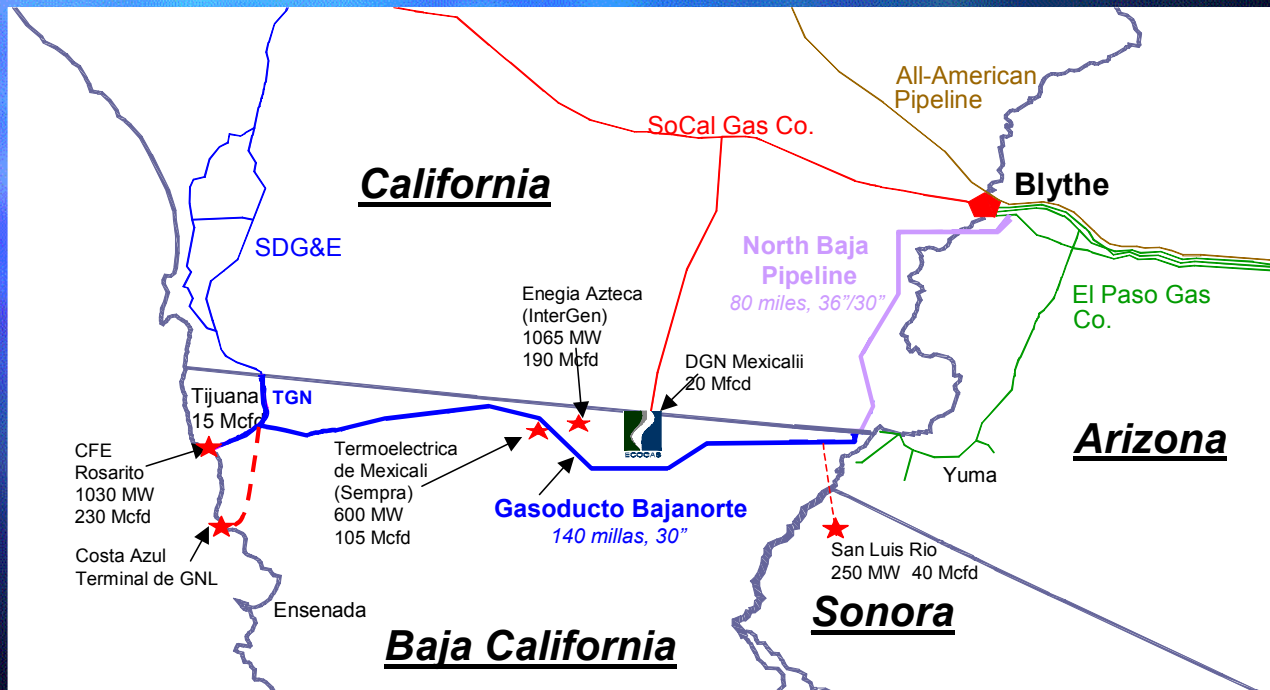


Load Forecast 2002-2007

Areas	Load Growth 1997-2002	Peak Load MW		Expected Load Growth 2002-2007
		2002	2007	
Tijuana	8.52%	530	793	8.3%
Ensenada	5.71%	141	189	6.11%
Mexicali	6.77%	843	1,190	7.14%
San Luis R.C.	4.10%	155	211	6.36%
Tecate	6.68%	30	43	7.38%
Total	6.94%	1,699	2,426	7.38%

San Diego Growth: 1.5%: 2004 - 2009

Energy Infrastructure in Baja California



How to Meet Expected Demand for Energy Services?

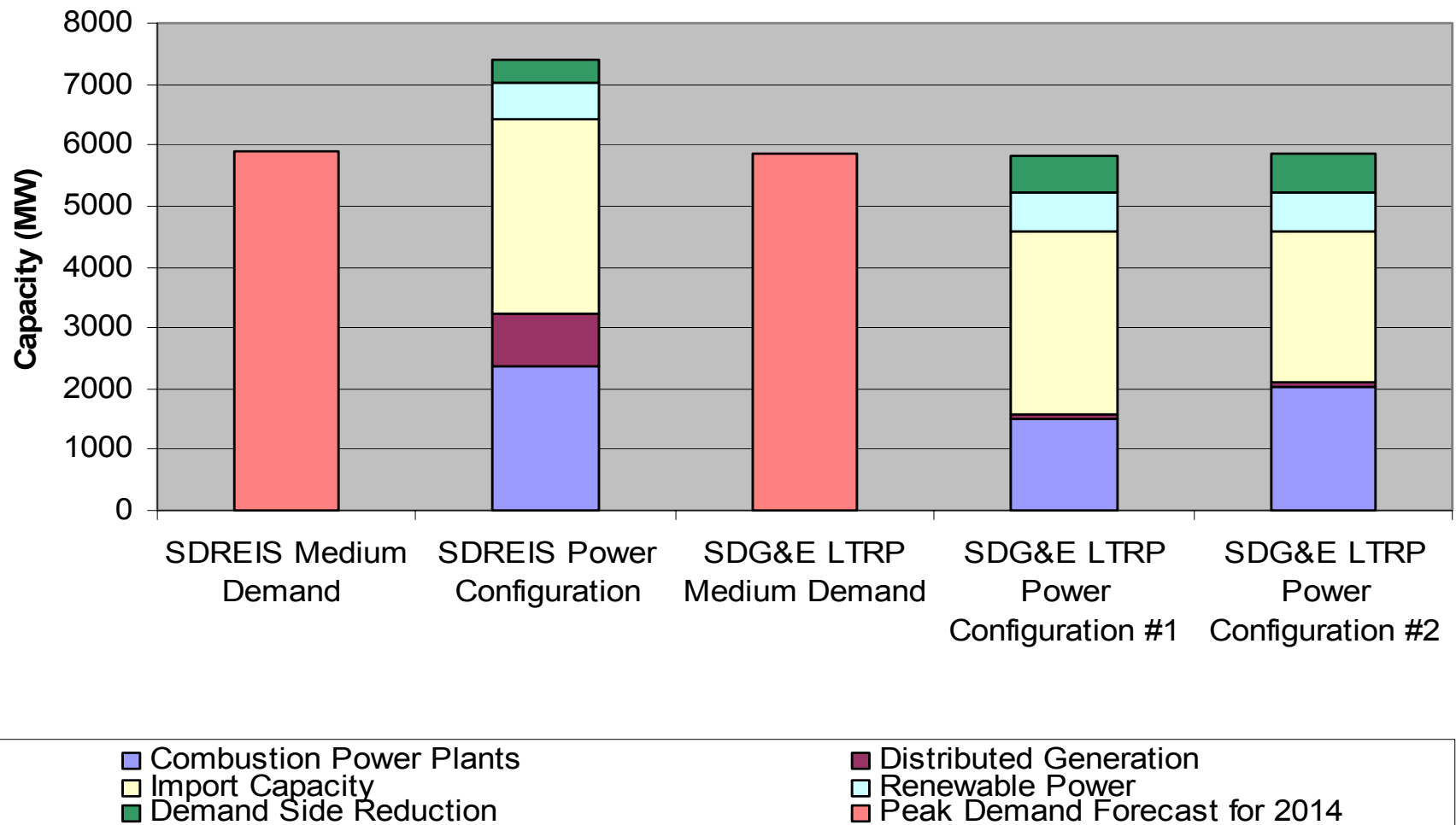
- Increase supply of conventional fuels (oil, natural gas, coal, uranium).
- Increase supply of renewable energy resources (solar, wind, biomass, geothermal).
- Reduce demand (demand side management, increase energy efficiency, time of day pricing, better housing stock, increased prices, etc.).
- *Most likely, a combination of all of the above.*

Energy Planning in the Region

- **San Diego**
 - Regional Energy Policy Advisory Council (SDREO, stakeholders)
 - Regional Energy Strategy (SANDAG)
 - SANDAG's Energy Working Group
 - SDGE LTRP
- **Binational Planning**
 - Border Energy Issues Group (SANDAG-Consul General of Mexico)
 - Tijuana Trabaja (citizens group)
 - Border Powers Working Group (NGO)
 - Border 2012 Air Working Group (EPA-SEMARNAT)
 - Southwest Consortium for Env. Res. and Policy (SCERP)
 - Western Governors Energy Working Group (WGA)

- *RES*: broad-based stakeholder process over two year period. Adopted by SANDAG in 2003 as region's official energy plan.
- *SDGE LTRP*: presented to CPUC July 2004.
- *Energy Working Group*: Established by SANDAG January 2004. Main purpose is to facilitate implementation of RES and develop regional consensus on energy issues, including close cooperation with utility.
- *Border Energy Issues Group*: Binational committee to discuss energy issues in CA-BC region. SANDAG-Consul General. Possibly develop agreed upon "rules of the road" for energy projects in border region.

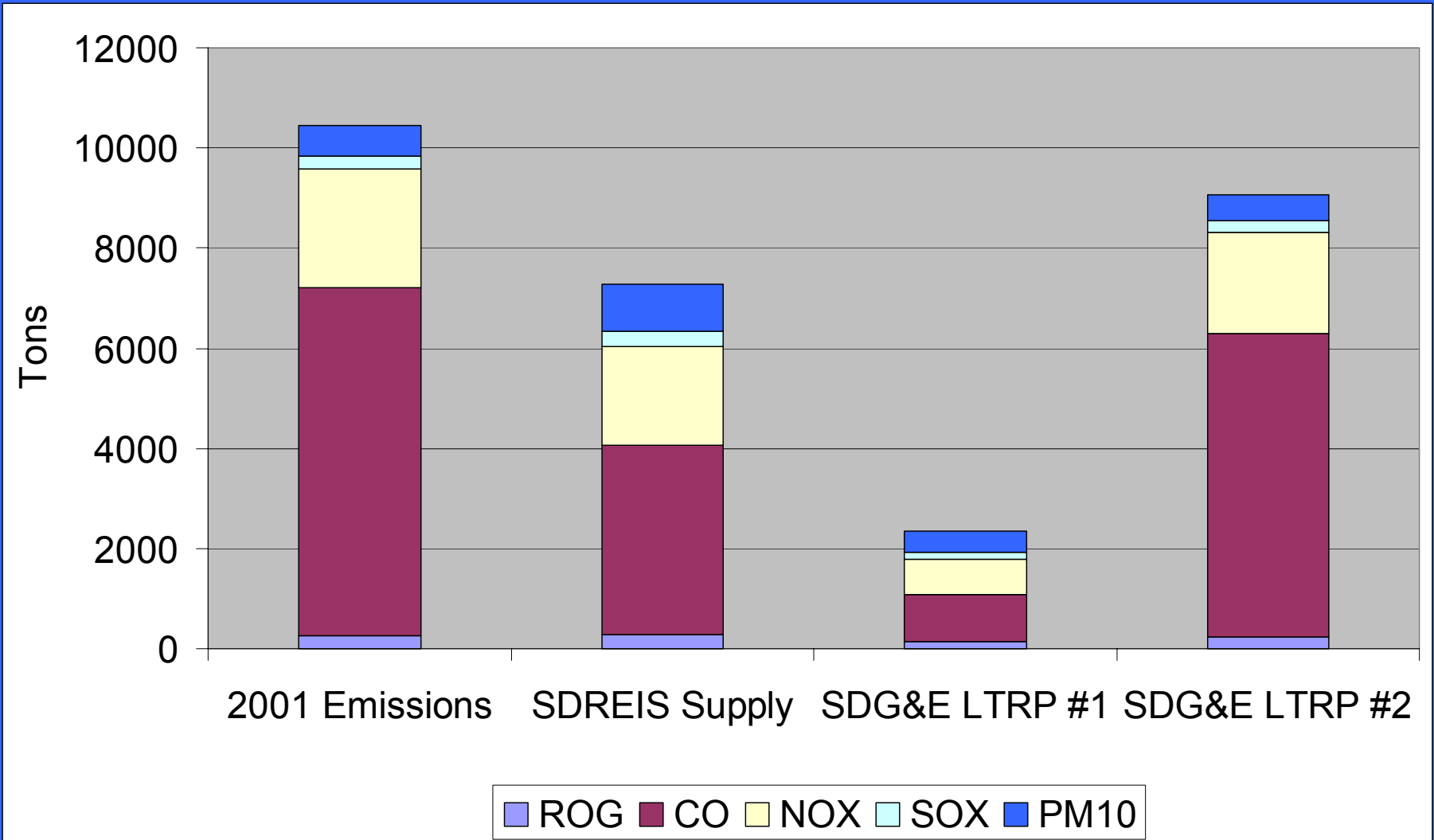
San Diego Peak Demand and Supply Forecasts 2014



#1: Current main power plants retired.
#2: Current main power plants still operating.

**SDSU Center for Energy
Studies**

Comparison of 2001 San Diego Power Production Air Emissions with Potential Air Emissions in 2014



Renewable Energy Study Group for the Greater San Diego Region

- Purpose of study is to determine the potential for renewable energy that could be developed in the region.
 - Focuses on technical and economic aspects of renewable energy development. *NOT on policy issues.*
- Ad-hoc group of energy specialists from:
 - San Diego State University
 - SDG&E
 - Qualcomm
 - SDREO
 - SOCAL Gas
 - Universidad Autónoma de Baja California, Mexicali
 - NREL
 - Southwest Consortium for Environmental Research and Policy (SCERP)

- Renewable resources under study:
 - wind, solar (PV and thermal), biomass, geothermal.
- Region under study:
 - San Diego and Imperial Counties
 - Baja California *municipios* of Tijuana, Rosarito, Tecate and Mexicali.
- Transmission as it relates to accessing renewable resources.
- Cross-border issues:
 - Transmission
 - Access to resources
 - Security
 - Regulatory questions
 - Environmental standards

Status:

- Wind analysis complete by November**
- PV analysis complete by January**
- Geothermal analysis complete by February**
- Biomass by March**
- Full report by end of March, 2005.**